CLAIMS

1. A double-stranded RNA molecule capable of suppressing the expression of a target gene in a cell by RNAi, which is designed such that one or more nucleotides in order from the 3'-end of the sense strand of double-stranded part in said RNA molecule are not complementary to the antisense strand,

wherein the sense strand of the double-stranded part has adequate number of nucleotides which are complementary to the antisense strand for enabling the hybridization of both strands in said cell.

2. The double-stranded RNA molecule according to claim 1, wherein the number of the nucleotides which are not complementary to the antisense strand in order from the 3'-end of the sense strand of the double-stranded part is 1 to 4.

3. The double-stranded RNA molecule according to claim 1, wherein the number of the nucleotides which are not complementary to the antisense strand in order from the 3'-end of the sense strand of the double-stranded part is 2.

4. The double-stranded RNA molecule according to claim 1, which is designed such that one additional nucleotide located at position 11-13 from the 3'-end of the sense strand of the double-stranded part is not complementary to the antisense strand.

5. The double-stranded RNA molecule according to claim 4, which is designed such that a nucleotide located at position 12 from the 3'-end of the sense strand of the double-stranded part is not complementary to the antisense strand.

6. The double-stranded RNA molecule according to claim 1, which is designed such that one additional nucleotide located at nucleotide position 1-3 in 5'- or 3'-direction from a site on the sense strand of the double-stranded part is not complementary to the antisense

strand, the site corresponding to the cleavage site of the target gene transcription product by RISC.

7. The double-stranded RNA molecule according to claim 1, which is designed such that one additional nucleotide located at nucleotide position 1-3 in 5'-direction from the nucleotide in the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an odd number of nucleotides, and that one additional nucleotide located at nucleotide position 1-3 in 5'-direction from the nucleotide at the 3'-side of the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an even number of nucleotides.

8. The double-stranded RNA molecule according to claim 1, which is designed such that one additional nucleotide located at nucleotide position 2 in 5'-direction from the nucleotide in the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an odd number of nucleotides, and that one additional nucleotide located at nucleotide position 2 in 5'-direction from the nucleotide at the 3'-side of the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an even number of nucleotides.

9. The double-stranded RNA molecule according to claim 1, which does not induce double-stranded RNA-dependent protein kinase or 2',5'-oligoadenylate synthetase in a mammalian cell.

10. The double-stranded RNA molecule according to claim 9, which has a strand length of 29 or less nucleotides.

11. A double-stranded RNA molecule capable of suppressing the expression of a target gene in a cell by RNAi, which is designed such that one or more nucleotides in order from the 5'-end of the sense strand of double-stranded part in said RNA molecule are not

complementary to the antisense strand,

wherein the sense strand of the double-stranded part has adequate number of nucleotides which are complementary to the antisense strand for enabling the hybridization of both strands in said cell.

12. The double-stranded RNA molecule according to claim 11, wherein the number of the nucleotides which are not complementary to the antisense strand in order from the 5'-end of the sense strand of the double-stranded part is 1 to 4.

13. The double-stranded RNA molecule according to claim 11, wherein the number of the nucleotides which are not complementary to the antisense strand in order from the 5'-end of the sense strand of the double-stranded part is 2.

14. The double-stranded RNA molecule according to claim 11, which is designed such that one or more additional nucleotides in order from the 3'-end of the sense strand of the double-stranded part are not complementary to the antisense strand.

15. The double-stranded RNA molecule according to claim 14, wherein the number of the nucleotides which are not complementary to the antisense strand in order from the 3'-end of the sense strand of the double-stranded part is 1 to 4.

16. The double-stranded RNA molecule according to claim 14, wherein the number of the nucleotides which are not complementary to the antisense strand in order from the 3'-end of the sense strand of the double-stranded part is 2.

17. The double-stranded RNA molecule according to claim 11, which is designed such that one additional nucleotide located at position 11-13 from the 3'-end of the sense strand of the double-stranded part is not complementary to the antisense strand.

18. The double-stranded RNA molecule according to claim 17, which is designed such that a nucleotide located at position 12 from the 3'-end of the sense strand of the double-stranded part is not complementary to the antisense strand.

19. The double-stranded RNA molecule according to claim 11, which is designed such that one additional nucleotide located at nucleotide position 1-3 in 5'- or 3'-direction from a site on the sense strand of the double-stranded part is not complementary to the antisense strand, the site corresponding to the cleavage site of the target gene transcription product by RISC.

20. The double-stranded RNA molecule according to claim 11, which is designed such that one additional nucleotide located at nucleotide position 1-3 in 5'-direction from the nucleotide in the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an odd number of nucleotides, and that one additional nucleotide located at nucleotide position 1-3 in 5'-direction from the nucleotide at the 3'-side of the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an even number of nucleotides.

21. The double-stranded RNA molecule according to claim 11, which is designed such that one additional nucleotide located at nucleotide position 2 in 5'-direction from the nucleotide in the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an odd number of nucleotides, and that one additional nucleotide located at nucleotide position 2 in 5'-direction from the nucleotide at the 3'-side of the center of the sense strand of the double-stranded part is not complementary to the antisense strand when the double-stranded part of the sense strand has an even number of nucleotides.

22. The double-stranded RNA molecule according to claim 11, which does not induce double-stranded RNA-dependent protein kinase or 2',5'-oligoadenylate synthetase in a mammalian cell.

23. The double-stranded RNA molecule according to claim 22, which has a strand length of 29 or less nucleotides.

24. A method for suppressing the expression of a target gene in a cell, comprising a step of introducing the double-stranded RNA molecule according to any one of claims 1-23 into the cell.

25. The method according to claim 24, wherein the cell is a mammalian cell.

26. A vector comprising both of a DNA encoding the sense strand of the double-stranded RNA molecule according to any one of claims 1-23 and a DNA encoding the antisense strand of said RNA molecule.

27. A method for suppressing the expression of a target gene in a cell, comprising a step of introducing a combination of a vector containing a DNA encoding the sense strand of the double-stranded RNA molecule according to any one of claims 1-23 and a vector containing a DNA encoding the antisense strand of said RNA molecule, or a vector according to claim 26, into the cell.

28. The method according to claim 27, wherein the cell is a mammalian cell.

29. A double-stranded RNA molecule capable of suppressing the expression of a target gene in a cell by RNAi, which is modified such that said double-stranded RNA molecule is incorporated into an RNA-induced silencing complex from the side of 5'-end of the antisense strand.

30. A double-stranded RNA molecule capable of suppressing the expression of a target gene in a cell by RNAi, which is modified such

that said double-stranded RNA molecule is incorporated into an RNA-induced silencing complex from the side of 5'-end of the sense strand.